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**NUCLEIC ACID SEQUENCING PROCESSES USING NON-RADIOACTIVE
DETECTABLE MODIFIED OR LABELED NUCLEOTIDES OR NUCLEOTIDE ANALOGS,
AND OTHER PROCESSES FOR NUCLEIC ACID DETECTION AND CHROMOSOMAL
CHARACTERIZATION USING SUCH NON-RADIOACTIVE DETECTABLE MODIFIED
OR LABELED NUCLEOTIDES OR NUCLEOTIDE ANALOGS**

Abstract Of The Disclosure

Non-radioactive detectable modified or labeled nucleotides or nucleotide analogs are useful in processes for determining the sequence of nucleic acids of interest. Such nucleotides or nucleotide analogs are modified on the base moieties, sugar moieties or the phosphate moieties. Modified nucleotide analogs can be attached to or coupled to or incorporated into DNA or RNA and these include base analogs of pyrimidine, purine or 7-deazapurine, sugar analogs and phosphate analogs. Base analogs include, for example, thymidine analogs, uridine and deoxyuridine analogs, such as 5-hydroxymethyl-2'-deoxycytidylic acid and 5-bromo-2'-deoxyuridine-5'-phosphate, cytidine and deoxycytidine analogs, adenine, adenosine and deoxyadenosine analogs, such as tubercidin and toyocamycin, and guanine, guanosine and deoxyguanosine analogs. The non-radioactive detectable modified or labeled nucleotides or nucleotide analogs of this invention are also useful in detection processes for detecting the presence of nucleic acids of interest. Detection processes using the non-radioactive detectable modified or labeled nucleotides or nucleotide analogs extend to the use of a gel for separating or resolving hybrids formed between non-radioactively labeled oligonucleotides or polynucleotides and such nucleic acids of interest. Several processes for chromosomal characterization can also be carried out using such non-radioactive detectable modified or labeled nucleotides or nucleotide analogs.

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